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(FILE 'HOME' ENTERED AT 14:45:59 ON 15 JUL 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 14:46:22 ON 15 JUL 2003

L1 1852 S TRANSGENIC (L) (CHICKEN OR HEN OR FOWL OR BIRD)
L2 72 S L1 AND (INTERFERON OR ERYTHROPOIETIN OR EPO OR IFN)
L3 39 DUP REM L2 (33 DUPLICATES REMOVED)
L4 17 S L3 AND PY<=1997
L5 17 SORT L4 PY

FILE 'STNGUIDE' ENTERED AT 14:52:25 ON 15 JUL 2003

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 14:54:01 ON 15 JUL 2003

E IVARIE ROBERT?/AU
L6 21 S E2
L7 3 S L6 AND TRANSGEN?
L8 3 DUP REM L7 (0 DUPLICATES REMOVED)
L9 6 S L6 AND TRANS?
L10 29 S E1
L11 17 S L10 AND TRANS?
L12 5 S L11 AND EGG?

=> d an ti so au ab pi l12 1-5

L12 ANSWER 1 OF 5 MEDLINE
AN 2002719100 MEDLINE
TI Avian **transgenesis**: progress towards the promise.
SO TRENDS IN BIOTECHNOLOGY, (2003 Jan) 21 (1) 14-9. Ref: 76
Journal code: 8310903. ISSN: 0167-7799.
AU **Ivarie Robert**
AB The hen has long held promise as a low cost, high-yield bioreactor for the production of human biopharmaceuticals in **egg** whites. A typical **egg** white contains 3.5-4.0 grams of protein, more than half of which comes from a single gene (ovalbumin). Harnessing the power of the gene to express a recombinant protein could yield up to a gram or more of the protein in the naturally sterile **egg**. Accordingly, a major effort has been underway for more than a decade to develop robust methods for modification of the chicken genome. This effort intensified in the mid-1990s when several avian **transgenic** companies entered the scene. Progress has been made in that time but much remains to be done.

L12 ANSWER 2 OF 5 MEDLINE
AN 2002190519 MEDLINE
TI Expression of exogenous protein in the **egg** white of **transgenic** chickens.
SO NATURE BIOTECHNOLOGY, (2002 Apr) 20 (4) 396-9.
Journal code: 9604648. ISSN: 1087-0156.
AU Harvey Alex J; Speksnijder Gordon; Baugh Larry R; Morris Julie A; **Ivarie Robert**
AB Using a replication-deficient retroviral vector based on the avian leukosis virus (ALV), we inserted into the chicken genome a **transgene** encoding a secreted protein, beta-lactamase, under the control of the ubiquitous cytomegalovirus (CMV) promoter. Biologically active beta-lactamase was secreted into the serum and **egg** white of four generations of **transgenic** chickens. The expression levels were similar in successive generations, and expression levels in the magnum of the oviduct were constant over at least 16 months in **transgenic** hens, indicating that the **transgene** was stable and not subject to silencing. These results support the potential of the hen as a bioreactor for the production of commercially valuable, biologically active proteins in **egg** white.

L12 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS
AN 2002:931060 CAPLUS
DN 138:215789
TI Avian **transgenesis**: progress towards the promise
SO Trends in Biotechnology (2002), Volume Date 2003, 21(1), 14-19

CODEN: TRBIDM; ISSN: 0167-7799

AU **Ivarie, Robert**

AB A review. The hen has long held promise as a low cost, high-yield bioreactor for the prodn. of human biopharmaceuticals in **egg** whites. A typical **egg** white contains 3.5-4.0 g of protein, more than half of which comes from a single gene (ovalbumin). Harnessing the power of the gene to express a recombinant protein could yield up to a gram or more of the protein in the naturally sterile **egg**. Accordingly, a major effort has been underway for more than a decade to develop robust methods for modification of the chicken genome. This effort intensified in the mid-1990s when several avian **transgenic** companies entered the scene. Progress has been made in that time but much remains to be done.

L12 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2002:291304 CAPLUS

DN 137:135738

TI Expression of exogenous protein in the **egg** white of **transgenic** chickens

SO Nature Biotechnology (2002), 20(4), 396-399
CODEN: NABIF9; ISSN: 1087-0156

AU Harvey, Alex J.; Speksnijder, Gordon; Baugh, Larry R.; Morris, Julie A.; **Ivarie, Robert**

AB Using a replication-deficient retroviral vector based on the avian leukosis virus (ALV), the authors inserted into the chicken genome a **transgene** encoding a secreted protein, .beta.-lactamase, under the control of the ubiquitous cytomegalovirus (CMV) promoter. Biol. active .beta.-lactamase was secreted into the serum and **egg** white of four generations of **transgenic** chickens. The expression levels were similar in successive generations, and expression levels in the magnum of the oviduct were const. over at least 16 mo in **transgenic** hens, indicating that the **transgene** was stable and not subject to silencing. These results support the potential of the hen as a bioreactor for the prodn. of com. valuable, biol. active proteins in **egg** white.

L12 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2003 ACS

AN 2000:145005 CAPLUS

DN 132:204036

TI Direct avian oviduct **transgenesis** for exogenous protein expression in poultry **eggs**

SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2

IN **Ivarie, Robert**; Harvey, Alex J.; Murphy, George F., Jr.; Rapp, Jeffrey C.

AB Methods for prepg. **transgenic** avians which express exogenous protein substantially only in their oviducts are disclosed. Each of the methods comprises delivering nucleic acid expression cassettes directly to the oviducts of the avians. The exogenous protein expressed by the expression cassette is secreted into the lumen of the avian oviduct and secreted into the **eggs** of the **transgenic** avians. Methods for prepg. **eggs** which contain exogenous protein, such as human interferon, and methods for the prodn. of proteins are also disclosed. The methods for direct oviduct **transgenesis** may also be used to assess the suitability of expression cassettes or exogenous proteins for expression in the avian oviduct.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000011151	A2	20000302	WO 1999-US19393	19990825
WO 2000011151	A3	20000615		

W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9956907	A1	20000314	AU 1999-56907	19990825

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L4 17 S L3 AND PY<=1997
L5 17 SORT L4 PY

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FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 14:54:01 ON 15 JUL 2003

=> d an ti so au ab pi l5 8

L5 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2003 ACS
AN 1995:645229 CAPLUS
DN 123:49258
TI Chicken **interferon** gene, its sequence and recombinant expression, and its antiviral action
SO PCT Int. Appl., 46 pp.
CODEN: PIXXD2
IN Sekellick, Margaret J.; Marcus, Philip I.; Ferrandino, Anthony F.
AB A **chicken interferon** gene sequence and its deduced amino acid sequence is provided. There is also disclosed a method of producing biol. active **chicken interferon** recombinantly, a method of isolating other non-mammalian **interferon** genes, a method of making a **transgenic fowl** having the **chicken interferon** gene incorporated therein, and a method for delivery of the **chicken interferon** in the **bird**, such as by genetic immunization or aerosol. Expression of the gene yields functional **chicken interferon**. Thus, **chicken interferon** cDNA was isolated which coded for the complete mature **interferon** sequence of 162 amino acids plus a 31-residue signal peptide. A cDNA probe was also isolated, consisting of 269 nucleotides with a 5'-primer region of 32 bases, a 3' primer region of 20 bases, and a 217-base partial sequence of the **chicken interferon** gene. The probe can be used in screening a non-mammalian cDNA library by std. procedures. Glycosylated recombinant **chicken interferon** could be expressed in transfected mouse L(Y) cells, human WISH cells, and COS-1 cells, and displayed antiviral activity. **Chicken interferon** cDNA can be integrated into plasmid or retroviral vectors under the control of the **chicken** metallothionein promoter (for Cd or Zn induction) and introduced into sperm, egg, or zygote of **fowls** in order to prevent viral and/or parasitic infection.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9511302	A1	19950427	WO 1994-US11660	19941021	<--
	W: AU, BR, CA, JP, KR					
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
	US 5641656	A	19970624	US 1993-139909	19931022	<--
	US 5885567	A	19990323	US 1994-308821	19940919	
	AU 9480771	A1	19950508	AU 1994-80771	19941021	<--
	AU 684849	B2	19980108			
	EP 724638	A1	19960807	EP 1994-931841	19941021	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL					

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     FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED
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L3           39 DUP REM L2 (33 DUPLICATES REMOVED)
L4           17 S L3 AND PY<=1997
L5           17 SORT L4 PY

     FILE 'STNGUIDE' ENTERED AT 14:52:25 ON 15 JUL 2003

     FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED
     AT 14:54:01 ON 15 JUL 2003
                E IVARIE ROBERT?/AU
L6           21 S E2
L7            3 S L6 AND TRANSGEN?
L8            3 DUP REM L7 (0 DUPLICATES REMOVED)

=> d an ti so au ab pi l8 2

L8   ANSWER 2 OF 3  CAPLUS  COPYRIGHT 2003 ACS
AN   1999:271485  CAPLUS
DN   130:277660
TI   Vectors comprising a magnum-specific promoter for avian
     transgenesis
SO   PCT Int. Appl., 67 pp.
     CODEN: PIXXD2
IN   Ivarie, Robert D.; Harvey, Alex J.; Morris, Julie A.; Liu,
     Guodong
AB   This invention provides vectors and methods for the stable introduction of
     exogenous nucleic acid sequences into the genome of a bird and for
     expressing said exogenous sequences to alter the phenotype of the bird or
     to produce desired proteins.  In particular, transgenic chickens
     are produced which express exogenous sequences in their oviducts.  Eggs
     which contain exogenous proteins are also produced.  In one specific
     embodiment, an avian leukosis virus retroviral vector is used which
     comprises a modified pNLB plasmid contg. an exogenous gene that is
     inserted downstream of a segment of the ovalbumin promoter region.  The
     total length of the ovalbumin promoter segment may be from about 0.88 kb
     to about 7.4 kb in length, and includes both the steroid-dependent
     regulatory element and the neg. regulatory element.  An RNA copy of the
     modified retroviral vector, packaged into viral particles is used to
     infect embryonic blastoderms which develop into transgenic
     birds.  Alternatively, helper cells which produce the retroviral
     transducing particles are delivered to the embryonic blastoderm.
     PATENT NO.         KIND  DATE          APPLICATION NO.  DATE
     ---------------    ----  --------      ---------------  --------
PI   WO 9919472         A1    19990422      WO 1998-US21975  19981015
         W:  AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
             DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE,
             KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,
             MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
             TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI,
             CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     CA 2307840          AA    19990422      CA 1998-2307840  19981015
     AU 9911899          A1    19990503      AU 1999-11899    19981015
     AU 752946           B2    20021003
     EP 1023442          A1    20000802      EP 1998-954994   19981015
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, FI
     JP 2001520009       T2    20011030      JP 2000-516025   19981015
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L Number	Hits	Search Text	DB	Time stamp
1	1695	Transgenic WITH (chicken OR bird or fowl or turkey or hen)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:20
7	661	(Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:12
13	16	((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME interferon)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:13
19	7	((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME erythropoietin)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:13
25	21	(((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME interferon)) or (((Transgenic WITH (chicken OR bird or fowl or turkey or hen)) and egg) and (egg SAME erythropoietin))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:13
31	28	Transgenic WITH (chicken OR bird or fowl or turkey or hen).clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:20
38	16	(US-6395961-$ or US-6333192-$ or US-6156569-$ or US-5897998-$ or US-5784992-$ or US-5162215-$ or US-H001065-$ or US-4997763-$ or US-6515199-$).did. or (US-20020116732-$ or US-20020108132-$ or US-20020028488-$ or US-20010039668-$ or US-20030126629-$ or US-20030126628-$ or US-20030074681-$).did.	USPAT; US-PGPUB	2003/07/15 14:29
41	16	((US-6395961-$ or US-6333192-$ or US-6156569-$ or US-5897998-$ or US-5784992-$ or US-5162215-$ or US-H001065-$ or US-4997763-$ or US-6515199-$).did. or (US-20020116732-$ or US-20020108132-$ or US-20020028488-$ or US-20010039668-$ or US-20030126629-$ or US-20030126628-$ or US-20030074681-$).did.) and stage	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/15 14:29
-	4905	800/$?.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:07
-	835	800/$?.ccls. and (chick$10 or bird or fowl)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:25
-	34	(800/$?.ccls. and (chick$10 or bird or fowl)) and (transgen$10 ADJ (chick$10 or bird or fowl))	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:08
-	12	(US-4997763-$ or US-H001065-$ or US-5162215-$ or US-5897998-$ or US-6156569-$ or US-6333192-$ or US-6395961-$ or US-5784992-$).did. or (US-20010039668-$ or US-20020028488-$ or US-20020108132-$ or US-20020116732-$).did.	USPAT; US-PGPUB	2002/09/16 13:21
-	2	((US-4997763-$ or US-H001065-$ or US-5162215-$ or US-5897998-$ or US-6156569-$ or US-6333192-$ or US-6395961-$ or US-5784992-$).did. or (US-20010039668-$ or US-20020028488-$ or US-20020108132-$ or US-20020116732-$).did.) and (EPO or interferon$10)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:25

-	51	(800/$?.ccls. and (chick$10 or bird or fowl)) and EPO	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:27
-	1213	EPO and (chick$10 or bird or fowl)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:26
-	486	(EPO and (chick$10 or bird or fowl)) and transgenic$10	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:26
-	31	(800/$?.ccls. and (chick$10 or bird or fowl)) and Erythropoietin$5	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:34
-	110	(800/$?.ccls. and (chick$10 or bird or fowl)) and interferon$5	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:42
-	300	(800/$?.ccls. and (chick$10 or bird or fowl)) and egg$2	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:42
-	65	((800/$?.ccls. and (chick$10 or bird or fowl)) and egg$2) and (interferon or erythropoietin)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/16 13:43